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LISTS OF SPECIES

Acanthocephala, Annelida, Arthropoda, Myxozoa, Nematoda and Platyhelminthes parasites of fishes from the Guandu river, Rio de Janeiro, Brazil

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ABSTRACT: Using information from all published reports and data collected during several parasitological surveys between April 2003 and September 2009, a checklist of the parasites of fishes from Guandu River, southeastern of Brazil was generated. A total of 85 parasite species, 54 named species (1 Acanthocephala, 1 Cestoda, 2 Crustacea, 13 Digenea, 11 Nematoda, 23 Monogenea and 3 Myxozoa) and 31 undetermined species (3 Acanthocephala, 2 Cestoda, 1 Crustacea, 8 Digenea, 8 Nematoda, 4 Hirudinea, 3 Monogenea and 2 Myxozoa) in 21 fish host species from Guandu River, were listed in the current study, including 36 new locality records and 36 new host records. Also, a host-parasite list is included herein.

Introduction

Brazil is the fifth largest country in the world and has the highest species diversity of all of the megadiversity countries, accounting for roughly 14 % of the world's biota (Muniz-Pereira *et al.* 2009). Parasites are recognized as an important component of global biodiversity (Poulin and Morand 2004). Given the integral roles played by parasites in natural ecosystems, identifying hotspots of high parasite diversity, as well as areas of relatively low parasite diversity, is crucial for a complete understanding of the functioning of the biosphere (Luque and Poulin 2007). Currently, the biodiversity of freshwater ecosystems of Latin America is threatened, mainly by environmental problems resulting from the degradation of the ecosystems. In this context, parasite biodiversity can be very important because parasitism plays key roles in ecosystems, regulating the abundance or density of host populations, stabilize food webs and structuring animal communities. Thus, a good knowledge of parasite diversity and whether or not it is declining is crucial for environmental management and conservation (Luque and Poulin 2007). Here we provide a checklist of the parasites species associated with fishes from Guandu River (Figure 1) in function of the strategic importance of this River, which is the main source of potable water in Rio de Janeiro. The information is presented as a list of parasite species and as a host-parasite list.

Materials and methods

The elaboration of the checklist of the species of parasites reported from fishes from Guandu river, was based on information collected from two sources. Firstly, using published records and papers derived of literature. Secondly, through the sampling between April 2003 to September 2009 where were analyzed 786 specimens of fish, belonging to 21 species from the Guandu River (Table 1), near the dam of water treatment station (WTS) (22°48'2" S, 43°37'35" W), and captured by local fishermen. The checklist follows the classification and systematic arrangements of the following studies: Amin (1987) for Acanthocephala; Khalil *et al.* (1994) for Cestoda; Boxshall and Halsey (2004) for Crustacea; Kohn *et al.* (2007) for Digenea; Davies (1991) for Hirudinea; Boeger and Vianna (2006) for Monogenea and Moravec (1998) for Nematoda. The parasites are arranged according to the class, order and family, within which the species are presented in alphabetical order. Parasite species names follow those provided in the most recent taxonomic literature. Species of fishes are arranged in alphabetical sequence and valid names are adopted from FishBase (Froese and Pauly 2009). The following conventions in relation to the parasite records were observed: NHR refers to a new host record and NGR refers to Guandu River as new geographical

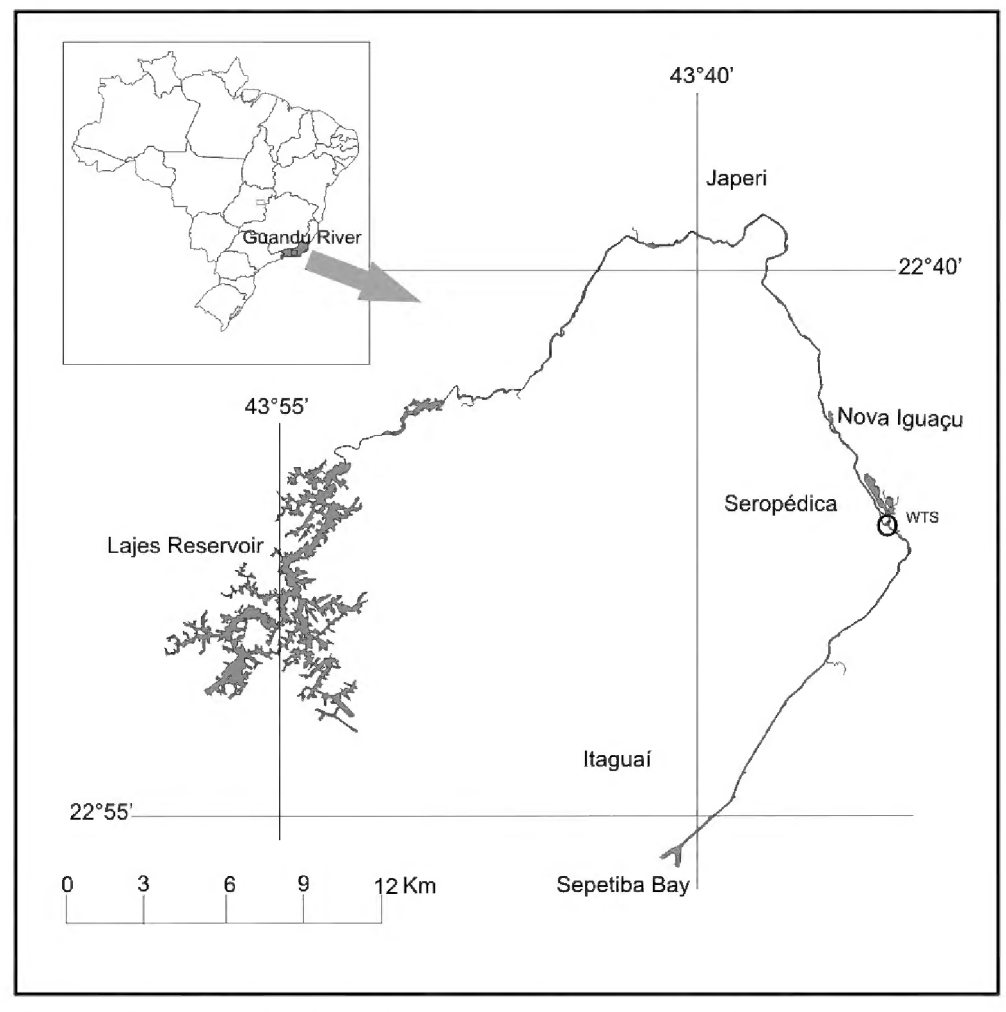

FIGURE 1. Map of the Guandu river and the area of collection (circle) near to the dam of water treatment station (WTS) (22°48'32" S, 43°37'35" W)

record. Voucher specimens of parasites species were deposited in the Coleção Helmintológica do Instituto de Biociências de Botucatu (CHIBB), Universidade Estadual Paulista, State of São Paulo, Brazil.

Results and Discussion

A total of 54 named species of parasites (1 Acanthocephala, 1 Cestoda, 2 Crustacea, 13 Digenea, 11 Nematoda, 23 Monogenea and 3 Myxozoa) and 31 undetermined species of parasites (3 Acanthocephala, 2 Cestoda, 1 Crustacea, 8 Digenea, 8 Nematoda, 4 Hirudinea, 3 Monogenea and 2 Myxozoa) (Figure 2) in 21 host species (2 Anostomidae, 2 Auchenipteridae, 1 Callichthyidae, 1 Centropomidae, 4 Characidae, 4 Cichlidae, 1 Curimatidae, 1 Gymnotidae, 1 Heptapteridae, 2 Loricariidae, 1 Mugilidae and 2 Pimelodidae) from Guandu River were listed in the current study, including 36 new locality records and 36 new host records.

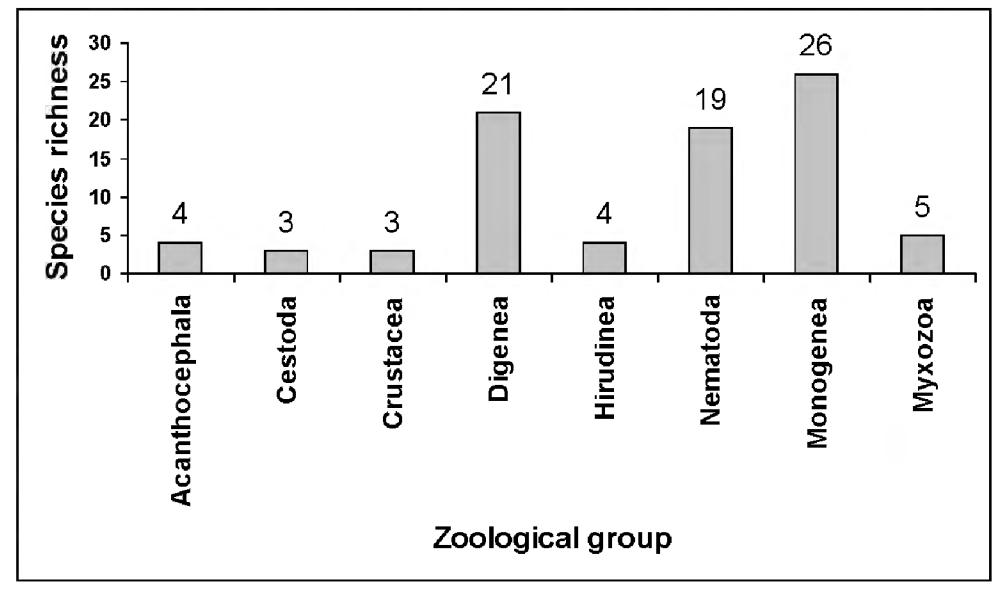

FIGURE 2. Species richness (number of species) of fish parasites according to zoological groups recorted in the Guandu river, State of Rio de Janeiro, Brazil.

TABLE 1. Host species studied for parasites from Guandu River, State of Rio de Janeiro, Brazil, between April 2003 and September 2009.

HOSTS	COMMON NAME	N TOTAL
ANOSTOMIDAE		
Leporinus conirostris Steindachner, 1875	piau	18
Leporinus copelandii Steindachner, 1875	piau	30
AUCHENIPTERIDAE		
Glanidium melanopterum Miranda Ribeiro, 1918	bagre	10
Trachelyopterus striatulus (Steindachner, 1877)	cumbaca	60
CALLICHTHYIDAE		
Hoplosternum littorale (Hankock, 1828)	tamboatá	100
CENTROPOMIDAE		
Centropomus undecimalis (Bloch, 1792)	robalo	31
CHARACIDAE		
Astyanax bimaculatus (Linnaeus 1 758)	lambari-amarelo	40
Astyanax parahybae Eigenmann, 1908	lambari-vermelho	40
Mylossoma aureum (Spix and Agassiz, 1829)	pacu	17
Oligosarcus hepsetus (Cuvier, 1829)	bocarra	40
CICHLIDAE		
Astronotus ocellatus (Agassiz, 1831)	apaiari	35
Cichla ocellaris Bloch and Schneider, 1801	tucunaré	26
Geophagus brasiliensis (Quoy and Gaimard, 1824)	acará	50
Tilapia rendalii (Boulenger, 1897)	tilápia	30
CURIMATIDAE		
Cyphocharax gilbert (Quoy and Gaimard, 1824)	sairú	60
GYMNOTIDAE		
Gymnotus carapo Linnaeus, 1758	peixe-banana	30
HEPTAPTERIDAE		
Rhamdia quelen (Quoy and Gaimard, 1824)	bagre	32
LORICARIIDAE		
Hypostomus affinis (Steindachner, 1877)	cascudo	31
Loricariichthys castaneus (Castelnau, 1855)	cascudo-viola	32
MUGILIDAE		
Mugil liza Valenciennes, 1836	tainha	34
PIMELODIDAE		
Pimelodus maculatus Lacépède, 1803	mandi-amarelo	40
TOTAL		786

ACANTHOCEPHALA Rudolphi, 1808

EOACANTHOCEPHALA Van Cleave, 1936

NEOECHINORHYNCHIDA Southwell and MacFie, 1925

Neoechinorhynchidae Ward, 1917

Neoechinorhynchus paraguayensis Machado Filho, 1959
Host: *Geophagus brasiliensis* (Quoy and Gaimard, 1824)
References: Nickol and Padilha (1979), Azevedo *et al.* (2006), Carvalho *et al.* (2010)

Neoechinorhynchus sp.
Host: *Gymnotus carapo* Linnaeus, 1758 (NHR)
Specimen deposited: CHIBB 012L
Reference: Present paper

PALAEACANTHOCEPHALA Meyer, 1931

POLYMORPHIDA Petrochenko 1956

Polymorphidae Meyer, 1931

Andracantha sp. — cystacanth
Hosts: *Centropomus undecimalis* (Bloch, 1792) (NHR, NGR)
Specimen deposited: CHIBB 014L
Reference: Present paper

Polymorphus sp.— cystacanth
Hosts: *Astronotus ocellatus* (Agassiz, 1831), *Geophagus brasiliensis*, *Gymnotus carapo* (NHR), *Oligosarcus hepsetus* (Cuvier, 1829), *Rhamdia quelen* (Quoy and Gaimard, 1824)
Specimens deposited: CHIBB 013L, 023L
References: Abdallah *et al.* (2004), Azevedo *et al.* (2006 ; 2007), present paper

ANNELIDA Lamarck, 1809

HIRUDINEA Lamarck, 1818

RHYNCHOBDELLIDA Blanchard, 1894

Glossiphoniidae Vaillant, 1890

Glossiphoniidae gen. sp.

Host: *Geophagus brasiliensis, Gymnotus carapo, Hoplosternum littorale* (Hankoc, 1828)

References: Abdallah *et al.* (2006), Azevedo *et al.* (2006), Carvalho *et al.* (2010), present paper

Helobdella sp.

Host: *Pimelodus maculatus* Lacépède, 1803, *Loricariichthys castaneus* (Castelnau, 1855) (NHR), *Trachelyopterus striatulus* (Steindachner, 1877)

Specimens deposited: CHIBB 015L, 021L, 022L

References: Santos *et al.* (2007), Mesquita *et al.* (2010), present paper

Placobdella sp.

Hosts: *Astronotus ocellatus, Cyphocharax gilbert* (Quoy and Gaimard, 1824), *Geophagus brasiliensis, Hoplosternum littorale*, *Hypostomus affinis* (Steindachner, 1877)

Specimen deposited: CHIBB 016L

References: Abdallah *et al.* (2005; 2006), Azevedo *et al.* (2006, 2007), present paper

Piscicolidae

Piscicolidae gen. sp.

Host: *Centropomus undecimalis, Geophagus brasiliensis, Rhamdia quelen*

References: Carvalho *et al.* (2010), present paper

ARTHROPODA Latreille, 1829

Maxillopoda Dahl, 1956

Cyclopoida Burmeister, 1834

Ergasilidae Von Nordmann, 1832

Ergasilus sp.

Host: *Mugil liza* Valenciennes, 1836 (NGR)

Specimen deposited: CHIBB 5014

Reference: Present paper

Lernaeidae Cobbold, 1879

Lamproglena monodi Capart, 1944

Hosts: *Astronotus ocellatus* (NHR, NGR), *Cichla ocellaris* Bloch and Schneider, 1801 (NHR), *Tilapia rendalii* (Boulenger, 1897)

Specimens deposited: CHIBB 5016, 5017

Reference: Present paper

Siphonostomatoida Thorell,1859

Lernaeopodidae Milne Edwards, 1840

Naobranchia lizae (Kroyer, 1863)

Host: *Mugil liza* (NHR, NGR)

Specimen deposited: CHIBB 5015

Reference: Present paper

MYXOZOA Grasse, 1960

Myxosporea Bütschli, 1881

Bivalvulida Schulman, 1959

Myxobolidae Thélohan, 1892

Henneguya cyphocharax Abdallah, Azevedo and Luque, 2007

Host: *Cyphocharax gilbert*

References: Abdallah *et al.* (2007)

Henneguya guanduensis Abdallah, Azevedo and Luque, 2007

Host: *Hoplosternum littorale*

References: Abdallah *et al.* (2007)

Henneguya sp.

Host: *Astyanax bimaculatus* (Linnaeus, 1758), *A. parahybae* Eigenmann, 1908 (NHR), *Leporinus conirostris* Steindachner, 1875 (NHR), *L. copelandii* Steindachner, 1875, *Oligosarcus hepsetus* (NHR)

Specimens deposited: CHIBB 009L

References: Santos *et al.* (2007), present paper

Myxobolus absonus Cellere, Cordeiro and Adriano, 2002

Host: *Pimelodus maculatus*

Reference: Santos *et al.* (2007)

Myxobolus sp.

Host: *Centropomus undecimalis, Mugil liza*

Specimens deposited: CHIBB 008L, 010L

Reference: Present paper

NEMATODA Rudolphi, 1808

Adenophorea Linstow, 1905

Enoplida Schuurmans, Stekhoven and Deconing, 1933

Capillariidae Railliet, 1915

Capillariidae gen. sp.

Hosts: *Gymnotus carapo, Hoplosternum littorale, Rhamdia quelen*

Reference: Abdallah *et al.* (2006), present paper

Paracapillaria piscicola (Travassos, Artigas and Pereira 1928)

Hosts: *Hypostomus affinis* (NHR, NGR), *Trachelyopterus striatulus*

Specimens deposited: CHIBB 4996, 4998

Reference: Mesquita *et al.* (2010), present paper

Secernentea Linstow, 1905

Ascaridida Skrjabin and Shulz, 1940

Anisakidae Skrjabin and Karoklin, 1945

Contracaecum sp.-larval

Hosts: *Astronotus ocellatus, Centropomus undecimalis, Geophagus brasiliensis, Gymnotus carapo, Loricariichthys castaneus* (NHR), *Rhamdia quelen, Trachelyopterus striatulus*

Specimens deposited: CHIBB 5010, 5011

Reference: Azevedo *et al.* (2006; 2007), Carvalho *et al.* (2010), Mesquita *et al.* (2010), present paper

Goezia sp.
Host: *Hoplosternum littorale*
Reference: Abdallah *et al.* (2006)

Hysterothylacium sp. -larval
Hosts: *Mugil liza* (NHR, NGR), *Trachelyopterus striatulus*
Specimens deposited: CHIBB 5012, 5013
Reference: Mesquita *et al.* (2010), present paper

Raphidascaris sp. -larval
Host: *Cyphocharax gilbert*
References: Abdallah *et al.* (2005)

Cucullanidae Cobbod,1864

Cucullanus (*Cucullanus*) *brevispiculus* Moravec, Kohn and Fernandes, 1993
Host: *Leporinus copelandii* (NHR, NGR)
Specimen deposited: CHIBB 5007
Reference: Present paper

Cucullanus (*Cucullanus*) *grandistomis* (Ferraz and Thatcher 1988) Moravec, Kohn and Fernandes, 1993
Host: *Mugil liza* (NHR, NGR)
Specimen deposited: CHIBB 5003
Reference: Present paper

Cucullanus (*Cucullanus*) *pinnai pinnai* Travassos, Artigas and Pereira, 1928
Host: *Pimelodus maculatus*
Specimen deposited: CHIBB 5004
References: Santos *et al.* (2007), Albuquerque *et al.* (2008), present paper

Cucullanus sp.
Host: *Geophagus brasiliensis, Rhamdia quelen* (NHR), *Trachelyopterus striatulus*
Specimen deposited: CHIBB 4997
Reference: Carvalho *et al.* (2010), Mesquita *et al.* (2010), present paper

Oxyurida Railliet, 1916

Pharyngodonidae Travassos, 1919

Cosmoxynemoides aguirrei Travassos, 1949
Hosts: *Cyphocharax gilbert*
References: Abdallah *et al.* (2005)

Spinoxyuris annulata Moravec and Thatcher, 2001
Host: *Mylossoma aureum* (Spix and Agassiz, 1829) (NHR, NGR)
Specimens deposited: CHIBB 5002
Reference: Present paper

Travnema araujoi Fernandes, Campos and Artigas, 1983
Host: *Cyphocharax gilbert*
References: Abdallah *et al.* (2005)

Spirurida Chitwood, 1933

Camallanidae Railliet and Henry, 1915

Procamallanus (*Procamallanus*) *peraccuratus* Pinto, Fábio, Noronha and Rolas, 1976
Hosts: *Cichla ocellaris* (NHR, NGR), *Geophagus brasiliensis, Gymnotus carapo* (NHR), *Trachelyopterus striatulus*
Specimens deposited: CHIBB 4999, 5000, 5006
Reference: Carvalho *et al.* (2010), Mesquita *et al.* (2010), present paper

Procamallanus sp.
Hosts: *Pimelodus maculatus*
Reference: Santos *et al.* (2007)

Procamallanus (*Spirocamallanus*) *hilarii* Vaz and Pereira, 1934
Hosts: *Astyanax bimaculatus, A. parahybae*
References: Abdallah *et al.* (2004)

Procamallanus (*Spirocamallanus*) *inopinatus* Travassos, Artigas and Pereira, 1928
Host: *Leporinus copelandii* (NGR)
Specimen deposited: CHIBB 5008
Reference: Present paper

Rhabdochonidae Travassos, Artigas and Pereira, 1928

Rhabdochona sp.
Host: *Centropomus undecimalis* (NHR, NGR)
Specimens deposited: CHIBB 5009
Reference: Present paper

Rhabdochona uruyeni Diaz-Ungría 1968
Host: *Pimelodus maculatus* (NHR, NGR)
Specimen deposited: CHIBB 5001
Reference: Present paper

PLATYHELMINTHES Gegenbaur, 1859

Cestoda Van Beneden, 1849

Proteocephalidea Mola, 1928

Proteocephalidae La Rue, 1914

Nomimoscolex sp.
Host: *Pimelodus maculatus*
Specimen deposited: CHIBB 024L
References: Santos *et al.* (2007), Albuquerque *et al.* (2008), present paper

Proteocephalus macrophallus (Diesing 1850)
Host: *Cichla ocellaris* (NGR)
Specimen deposited: CHIBB 025L
Reference: Present paper

Proteocephalus sp.
Host: *Gymnotus carapo* (NGR)

Specimen deposited: CHIBB 026L
Reference: Present paper

MONOGENEA van Beneden, 1858

DACTYLOGYRIDEA Bychowsky, 1937

Dactylogyridae Bychowsky, 1933

Anacanthorus paraspathulatus Kritsky, Boeger and van Every, 1992
Host: *Mylossoma aureum* (NHR, NGR)
Specimen deposited: CHIBB 027L
References: Present paper

Aphanoblastella mastigatus Suriano 1986
Host: *Rhamdia quelen* (NGR)
Specimen deposited: CHIBB 028L
References: Present paper

Demidospermus armostus Kritsky and Gutiérrez, 1998
Host: *Pimelodus maculatus* (NGR)
Specimen deposited: CHIBB 017L
References: Present paper

Demidospermus leptosynophallus Kritsky and Gutierrez, 1998
Host: *Pimelodus maculatus* (NHR, NGR)
Specimen deposited: CHIBB 019L
References: Present paper

Demidospermus majusculus Kritsky and Gutierrez, 1998
Host: *Pimelodus maculatus*
Reference: Santos *et al.* (2007)

Demidospermus paravalenciennesi Gutiérrez and Suriano, 1992
Host: *Pimelodus maculatus*
Specimen deposited: CHIBB 018L
References: Santos *et al.* (2007), present paper

Demidospermus sp.
Host: *Loricariichthys castaneus* (NHR)
Specimen deposited: CHIBB 029L
References: Present paper

Demidospermus uncusvalidus Gutiérrez and Suriano, 1992
Host: *Pimelodus maculatus*
Reference: Santos *et al.* (2007)

Gussevia asota Kritsky, Thatcher and Boeger, 1989
Host: *Astronotus ocellatus*
References: Azevedo *et al.* (2007), Abdallah *et al.* (2008)

Gussevia astronoti Kritsky, Thatcher and Boeger, 1989
Host: *Astronotus ocellatus*
References: Azevedo *et al.* (2007), Abdallah *et al.* (2008)

Gussevia tucunarense Kritsky, Thatcher and Boeger, 1986
Host: *Cichla ocellaris* (NGR)
Specimen deposited: CHIBB 030L
References: Present paper

Gussevia undulata Kritsky, Thatcher and Boeger, 1986
Host: *Cichla ocellaris* (NGR)
Specimen deposited: CHIBB 020L
References: Present paper

Ligophorus brasiliensis Abdallah, Azevedo and Luque, 2009
Host: *Mugil liza*
References: Abdallah *et al.* (2009)

Ligophorus guanduensis Abdallah, Azevedo and Luque, 2009
Host: *Mugil liza*
References: Abdallah *et al.* (2009)

Ligophorus lizae Abdallah, Azevedo and Luque, 2009
Host: *Mugil liza*
References: Abdallah *et al.* (2009)

Ligophorus tainhae Abdallah, Azevedo and Luque, 2009
Host: *Mugil liza*
References: Abdallah *et al.* (2009)

Sciadicleithrum ergensi Kritsky, Thatcher and Boeger, 1989
Host: *Cichla ocellaris* (NGR)
Specimen deposited: CHIBB 031L
References: Present paper

Sciadicleithrum guanduensis Carvalho, Tavares and Luque, 2008
Host: *Geophagus brasiliensis*
Reference: Carvalho *et al.* (2008), (2010a)

Trinigyrus hypostomatis Hanek, Molnar and Fernando, 1974
Host: *Hypostomus affinis* (NHR, NGR)
Specimen deposited: CHIBB 032L
References: Present paper

Diplectanidae Monticelli, 1903

Rhabdosynochus hargisi Kritsky, Boeger and Robaldo, 2001
Host: *Centropomus undecimalis* (NGR)
Specimen deposited: CHIBB 033L
References: Present paper

GYRODACTYLIDEA Bychowsky, 1937

Gyrodactylidae van Beneden and Hesse, 1863

Gyrodactylus sp.
Hosts: *Astyanax bimaculatus, A. parahybae* (NGR)
Specimen deposited: CHIBB 011L
References: Present paper

Hyperopletes malmbergi Boeger, Kritsky and Belmont-

Jégu, 1994
Host: *Hypostomus affinis* (NHR, NGR)
Specimen deposited: CHIBB 034L
References: Present paper

Phanerothecioides agostinhoi Kritsky, Vianna and Boeger, 2007
Host: *Hypostomus affinis* (NGR)
Specimen deposited: CHIBB 035L
References: Present paper

Scleroductus sp.
Host: *Glanidium melanopterum* Miranda Ribeiro, 1918, *Trachelyopterus striatulus, Pimelodus maculatus, Pimelodella* sp., *Rhamdia quelen*
References: Kritsky *et al.* (1995), Santos *et al.* (2007)

Scleroductus yuncensi Jará and Con,e 1989
Host: *Leporinus copelandii* (NHR, NGR)
Specimen deposited: CHIBB 036L
References: Present paper

MAZOCRAEIDEA Bychowsky 1937

Microcotylidae Taschenberg, 1879

Anakohnia brasiliana Bravo–Hollis, 1986
Host: *Centropomus undecimalis* (NHR, NGR)
Specimen deposited: CHIBB 001L
Reference: Present paper

TREMATODA Rudolphi, 1808

DIGENEA Carus, 1863

Acanthocollaritrematidae Travassos, Freitas and Bührnheim, 1965

Acanthocollaritrema umbilicatum Travassos, Freitas and Bührnheim, 1965
Host: *Centropomus undecimalis* (NGR)
Specimen deposited: CHIBB 037L
Reference: Present paper

Allocreadiidae (Looss, 1902) Stossich, 1903

Creptotrema creptotrema Travassos, Artigas and Pereira, 1928
Host: *Leporinus conirostris* (NHR, NGR)
Specimen deposited: CHIBB 038L
Reference: Present paper

Apocreadidae Skrjabin, 1942

Crassicutis sp.
Host: *Geophagus brasiliensis*
Reference: Carvalho *et al. (*2010)

Bucephalidae Poche, 1907

Bucephalus sp.
Host: *Centropomus undecimalis* (NGR)
Specimen deposited: CHIBB 039L, 049L
Reference: Present paper

Clinostomidae Lühe, 1901

Clinostomum complanatum (Rudolphi, 1814) -metacercariae
Hosts: *Astyanax bimaculatus, A. parahybae, Gymnotus carapo, Hoplosternum littorale, Oligosarcus hepsetus*
References: Abdallah *et al.* (2004), Abdallah *et al.* (2006), present paper

Clinostomum detruncatum Braum, 1899 -metacercariae
Hosts: *Rhamdia quelen* (NGR), *Trachelyopterus striatulus*
Specimens deposited: CHIBB 046L, 047L, 048L
Reference: Mesquita *et al.* (2010), present paper

Diplostomidae Poirier, 1886

Austrodiplostomum compactum (Lutz, 1928) -metacercariae
Hosts: *Centropomus undecimalis* (NHR), *Cichla ocellaris, Cyphocharax gilbert, Geophagus brasiliensis, Gymnotus carapo* (NHR), *Hypostomus affinis* (NHR), *Loricariichthys castaneus, Pimelodus maculatus* (NHR), *Trachelyopterus striatulus*
Specimens deposited: CHIBB 007L, 040L, 041L, 042L, 043L, 044L, 045L
References: Abdallah *et al.* (2005), Azevedo *et al.* (2006), Santos *et al.* (2007), Carvalho *et al.* (2010a, b), Mesquita *et al.* (2010), present paper

Diplostomum sp. -metacercariae
Host: *Geophagus brasiliensis, Pimelodus maculatus*
Specimen deposited: CHIBB 006L
Reference: Carvalho *et al.* (2010a, b), present paper

Neascus tipo 1
Host: *Geophagus brasiliensis*
Reference: Carvalho *et al.* (2010a, b)

Neascus tipo 2
Host: *Geophagus brasiliensis*
Reference: Carvalho *et al.* (2010a, b)

Posthodiplostomum macrocotyle Dubois, 1937 -metacercariae
Hosts: *Geophagus brasiliensis, Trachelyopterus striatulus*
Specimen deposited: CHIBB 005L
References: Azevedo *et al.* (2006), Mesquita *et al.* (2010), present paper

Posthodiplostomum sp. -metacercariae
Host: *Geophagus brasiliensis*
Reference: Carvalho *et al.* (2010a, b)

Sphincterodiplostomum musculosum Dubois, 1936 -metacercariae
Host: *Cyphocharax gilbert*

References: Abdallah *et al.* (2005)

Gorgoderidae, Looss 1901

Phyllodistomum rhamdiae Amato and Amato 1993
Host: *Rhamdia quelen*
Reference: Amato and Amato (1993)

Haplosplanchnidae Poche, 1926

Haplosplanchnidae gen. sp.
Host: *Mugil liza*
Reference: Present paper

Haploporidae Nicoll, 1914

Saccocoelioides elongatus Szidat, 1954
Host: *Mugil liza* (NHR, NGR)
Specimen deposited: CHIBB 004L
Reference: Present paper

Heterophyidae Odhner, 1914

Ascocotyle sp.–metacercariae
Host: *Mugil liza* (NHR, NGR)
Reference: Present paper

Lecithasteridae Odhner, 1905

Hysterolecitha brasiliensis Oliveira, Amato and Knoff, 1988
Host: *Mugil liza* (NGR)
Specimen deposited: CHIBB 003L
Reference: Present paper

Macroderoididae McMullen, 1937

Magnivitellinum corvitellinum Lacerda, Takemoto and Pavanelli, 2009
Host: *Hoplosternum littorale* (NGR)
Specimen deposited: CHIBB 002L
Reference: Present paper

Proterodiplostomidae (Dubois, 1936)

Herpetodiplostomum caimanicola (Dollfus, 1935) Dubois, 1936 -metacercariae
Host: *Hoplosternum littorale*
References: Abdallah *et al.* (2006)

Zonocotylidae Yamaguti, 1963

Zonocotyloides haroltravassosi (Padilha 1978) Kohn, Fernandes, Macedo and Abramson, 1985
Host: *Cyphocharax gilbert*
References: Padilha (1978), Abdallah *et al.* (2005)

HOST-PARASITE LIST

ACTINOPTERYGII

CHARACIFORMES

Anostomidae
Leporinus conirostris
Creptotrema creptotrema
Henneguya sp.
Leporinus copelandii
Cucullanus (*Cucullanus*) *brevispiculus*
Henneguya sp.
Procamallanus (*Spirocamallanus*) *inopinatus*
Scleroductus yuncensi
Characidae
Astyanax bimaculatus
Clinostomum complanatum
Gyrodactylus sp.
Henneguya sp.
Procamallanus (*Spirocamallanus*) *hilarii*
Astyanax parahybae
Clinostomum complanatum
Gyrodactylus sp.
Henneguya sp.
Procamallanus (*Spirocamallanus*) *hilarii*
Mylossoma aureum
Anacanthorus paraspathulatus
Spinoxyuris annulata
Oligosarcus hepsetus
Clinostomum complanatum
Henneguya sp.
Polymorphus sp.
Curimatidae
Cyphocharax gilbert
Austrodiplostomum compactum
Cosmoxynemoides aguirrei
Henneguya cyphocharax
Placobdella sp.
Raphidascaris sp.
Sphincterodiplostomum musculosum
Travnema araujoi
Zonocotyloides haroltravassosi

GYMNOTIFORMES

Gymnotidae
Gymnotus carapo
Austrodiplostomum compactum
Capillariidae gen. sp.
Clinostomum complanatum
Contracaecum sp.
Glossiphonidae gen. sp.
Neoechinorhynchus sp.
Polymorphus sp.
Procamallanus (*Procamallanus*) *peraccuratus*
Proteocephalus sp.

MUGILIFORMES

Mugilidae
Mugil liza
Ascocotyle sp.
Cucullanus (Cucullanus) grandistomis
Ergasilus sp.
Haplosplanchnidae gen. sp.
Hysterolecitha brasiliensis
Hysterothylacium sp.
Ligophorus brasiliensis
Ligophorus guanduenis

Ligophorus lizae
Ligophorus tainhae
Myxobolus sp.
Naobranchia lizae
Saccocoelioides elongatus

PERCIFORMES
Centropomidae
Centropomus undecimalis
Acanthocollaritrema umbilicatum
Anakohnia brasiliana
Andracantha sp.
Austrodiplostomum compactum
Bucephalus sp.
Contracaecum sp.
Myxobolus sp.
Piscicolidae gen. sp.
Rhabdochona sp.
Rhabdosynochus hargisi
Trypanorhyncha
Cichlidae
Astronotus ocellatus
Contracaecum sp.
Gussevia asota
Gussevia astronoti
Lamproglena monodi
Placobdella sp.
Polymorphus sp.
Cichla ocellaris
Austrodiplostomum compactum
Gussevia tucunarense
Gussevia undulata
Lamproglena monodi
Procamallanus (*Procamallanus*) *peraccuratus*
Proteocephalus macrophallus
Sciadicleithrum ergensi
Geophagus brasiliensis
Austrodiplostomum compactum
Contracaecum sp.
Crassicutis sp.
Diplostomum sp.
Glossiphoniidae gen. sp.
Neascus tipo 1
Neascus tipo 2
Neoechinorhynchus paraguayensis
Placobdella sp.
Polymorphus sp.
Posthodiplostomum macrocotyle
Posthodiplostomum sp.
Sciadicleithrum guanduensis
Tilapia rendalii
Lamproglena monodi

SILURIFORMES
Auchenipteridae
Glanidium melanopterum
Scleroductus sp.
Trachelyopterus striatulus
Austrodiplostomum compactum
Clinostomum detruncatum
Contracaecum sp.
Cucullanus sp.
Helobdella sp.
Hysterothylacium sp.
Paracapillaria piscicola
Posthodiplostomum macrocotyle
Procamallanus (*Procamallanus*) *peraccuratus*
Scleroductus sp.
Callichthyidae
Hoplosternum littorale
Capillaridae gen. sp.
Clinostomum complanatum
Glossiphoniidae gen. sp.
Goezia sp.
Henneguya guanduensis
Herpetodiplostomum caimancola
Magnivitellinum corvitellinum
Placobdella sp.
Heptapteridae
Rhamdia quelen
Aphanoblastella mastigatus
Capillariidae gen. sp.
Clinostomum detruncatum
Contracaecum sp.
Cucullanus sp.
Phyllodistomum rhamdiae
Piscicolidae gen. sp.
Polymorphus sp.
Scleroductus sp.
Loricariidae
Hypostomus affinis
Austrodiplostomum compactum
Hyperopletes malmbergi
Paracapillaria piscicola
Phanerothecioides agostinhoi
Placobdella sp.
Trinigyrus hypostomatis
Loricariichthys castaneus
Austrodiplostomum compactum
Contracaecum sp.
Demidospermus sp.
Helobdella sp.
Pimelodidae
Pimelodus maculatus
Austrodiplostomum compactum
Cucullanus (*Cucullanus*) *pinnai pinnai*
Demidospermus armostus
Demidospermus leptosynophallus
Demidospermus majusculus
Demidospermus paravalenciennesi
Demidospermus uncusvalidus
Diplostomum sp.
Helobdella sp.
Myxobolus absonus
Nomimoscolex sp.
Procamallanus sp.
Rhabdochona uruyeni
Scleroductus sp.
Pimelodella sp.
Scleroductus sp.

One of the main steps toward conservation of biodiversity requires systematic inventories and parasites have only recently been included in this evaluation of

biodiversity. In Brazil, only 17.3 % of fish species has its parasite fauna recorded, indicating that the total parasite biodiversity of fishes in the region is grossly underestimated (Luque and Poulin 2007).

The composition of the parasite fauna of fishes from Guandu River is represented mainly by species belonging to the families Dactylogyridae (Monogenea), Diplostomidae (Digenea), Anisakidae, Camallanidae and Cucullanidae (Nematoda). Among the groups of parasites found in this work, monogenea is the group that presented the greatest number of species. *Pimelodus maculatus* was the most parasitized fish species, with 14 species of metazoan parasites and the helminth recorded fom the greatest number of hosts was the digenean *A. compactum*. Some genera are clearly specific to South American fishes, whereas others are cosmopolitan and may have been introduced into this River with the translocation of their hosts, since in the last decades the Brazil has shown how the country with largest number of non-native fish introduced into continental waters. The translocation of fish was common in the 60s and 70s, mostly from the Amazonian Basin to the Southeast and Northeast, stimulated by economic reasons, aquaculture, ornamental, sport fishing, biological control or accidental (Buckup and Menezes 2003). This work expanded the geographic distribution and recorded new host for some parasite species, with new records for Brazil.

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